

SEQUENCE LISTING

<110> Egan, Sean E.
Wang, Wei
Sengar, Ameet

<120> ESE GENES AND PROTEINS

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<150> PCT/CA99/00375

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<150> US 60/118,739

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gtc Val	ctc Leu	cct Pro 100	cct Pro	atc Ile	atg Met	aaa Lys	caa Gln	ccc Pro 105	cct Pro	atg Met	ttc Phe	tct Ser	cca Pro 110	cta Leu	atc Ile	336
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Ser Asp Leu Asn Lys Asp Gly Lys Met Asp Gln Gln Glu Phe Ser Ile
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Ala Met Lys Leu Ile Lys Leu Lys Leu Gln Gly Gln Gln Leu Pro Val
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Val Leu Pro Pro Ile Met Lys Gln Pro Pro Met Phe Ser Pro Leu Ile
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Ser Ala Arg Phe Gly Met Gly Ser Met Pro Asn Leu Ser Ile His Gln
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Gln Ser Leu Ile Asp Leu Gly Ser Ser Ser Ser Thr Ser Ser Thr Ala
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 Lys Gly Met Ser Gly Tyr Leu Ser Gly Phe Gln Ala Arg Asn Ala Leu
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 325 330 335
 Val Asp Ser Val Asn Gly Thr Leu Pro Ser Tyr Gln Lys Thr Gln Glu
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 Ala Asn Tyr Glu Arg Gly Asn Met Glu Leu Glu Lys Arg Arg Gln Val
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 Lys Lys Gln Leu Glu Leu Glu Lys Arg Leu Glu Lys Gln Arg Glu Leu
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 Ala Ala Lys Gln Glu Leu Glu Arg Gln Arg Arg Leu Glu Trp Glu Arg
 450 455 460
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 Ile Val Arg Leu Ser Ser Arg Lys Lys Ser Leu His Leu Glu Leu Glu
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 Gln Ile Arg Lys Gln Thr Gln Lys Thr Glu Leu Glu Val Leu Asp Lys
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 Gln Cys Asp Leu Glu Ile Met Glu Ile Lys Gln Leu Gln Gln Glu Leu
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 Leu Asn Glu Arg Ile Lys Asn Met Gln Leu Ser Asn Thr Pro Asp Ser
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 Gly Ile Ser Leu Leu His Lys Lys Ser Ser Glu Lys Glu Glu Leu Cys
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 675 680 685
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 Glu Arg Lys Ala Glu Ala Lys Gln Ser Glu Thr Ala Ser Ala Leu Val
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 Asn Tyr Arg Ala Leu Tyr Pro Phe Glu Ala Arg Asn His Asp Glu Met
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 Glu Pro Gly Trp Leu Tyr Gly Ser Phe Gln Gly Lys Phe Gly Trp Phe
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 865 870 875 880
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 Gly Trp Phe Pro Lys Ser Tyr Val Lys Leu Ile Pro Gly Asn Glu Val
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 Gln Arg Gly Glu Pro Glu Ala Leu Tyr Ala Ala Val Thr Lys Lys Pro
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 Tyr Val Arg Pro Lys Asp Gln Glu Asn Phe Gly Asn Ala Ser Lys Ser
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Pro Thr Phe His Ala Val Cys Gln Val Ile Ala Met Tyr Asp Tyr
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Met Ala Asn Asn Glu Asp Glu Leu Asn Phe Ser Lys Gly Gln Leu
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Ile Asn Val Met Asn Lys Asp Asp Pro Asp Trp Trp Gln Gly Glu
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Thr Asn Gly Leu Thr Gly Leu Phe Pro Ser Asn Tyr Val Lys Met
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Thr Thr Asp Ser Asp Pro Ser Gln Gln Trp Cys Ala Asp Leu Gln
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Ala Leu Asp Thr Met Gln Pro Thr Glu Arg Lys Arg Gln Gly Tyr
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Ala Arg Ser Gln Lys Thr Ser Gly Ile Gly Arg Leu Met Val His Val
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Ile Glu Ala Thr Glu Leu Lys Ala Cys Lys Pro Asn Gly Lys Ser Asn
65 70 75 80

Pro Tyr Cys Glu Val Ser Met Gly Ser Gln Ser Tyr Thr Thr Arg Thr
85 90 95

Leu Gln Asp Thr Leu Asn Pro Lys Trp Asn Phe Asn Cys Gln Phe Phe
100 105 110

Ile Lys Asp Leu Tyr Gln Asp Val Leu Cys Leu Thr Met Phe Asp Arg
115 120 125

Asp Gln Phe Ser Pro Asp Asp Phe Leu Gly Arg Thr Glu Val Pro Val
130 135 140

Ala Lys Ile Arg Thr Glu Gln Glu Ser Lys Gly Pro Thr Thr Arg Arg
145 150 155 160

Leu Leu Leu His Glu Val Pro Thr Gly Glu Val Trp Val Arg Phe Asp
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Leu Gln Leu Phe Glu Gln Lys Thr Leu Leu
180 185

<210> 9

<211> 1078

<212> DNA

<213> Mus musculus

<400> 9
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<210> 10

<211> 309

<212> PRT

<213> Mus musculus

<400> 10

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35 40 45

Gln Arg Lys Gly Lys Gly Ala Val Gly Ala Tyr Gly Ser Glu Arg Thr
50 55 60

Thr Gln Ser Leu Gln Asp Phe Pro Val Ala Asp Ser Glu Glu Glu Ala
65 70 75 80

Glu Glu Glu Phe Gln Lys Glu Leu Ser Gln Trp Arg Lys Asp Pro Ser
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 Gly Ser Lys Lys Lys Pro Lys Tyr Ser Tyr Lys Thr Val Glu Glu Leu
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 Lys Ala Lys Gly Arg Val Ser Lys Lys Leu Thr Ala Pro Gln Lys Glu
 115 120 125
 Leu Ser Gln Val Lys Val Ile Asp Met Thr Gly Arg Glu Gln Lys Val
 130 135 140
 Tyr Tyr Ser Tyr Ser Gln Ile Ser His Lys His Ser Val Pro Asp Glu
 145 150 155 160
 Gly Val Pro Leu Leu Ala Gln Leu Pro Pro Thr Ala Gly Lys Glu Ala
 165 170 175
 Arg Met Pro Gly Phe Ala Leu Pro Glu Leu Glu His Asn Leu Gln Leu
 180 185 190
 Leu Ile Glu Arg Thr Glu Gln Glu Ile Ile Gln Ser Asp Arg Gln Leu
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 Gln Tyr Glu Arg Asp Met Val Val Ser Leu Ser His Glu Leu Glu Lys
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 Thr Ala Glu Val Leu Ala His Glu Glu Arg Val Ile Ser Asn Leu Ser
 225 230 235 240
 Lys Val Leu Ala Leu Val Glu Glu Cys Glu Arg Arg Met Gln Pro His
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 Gly Thr Asp Pro Leu Thr Leu Asp Glu Cys Ala Arg Ile Phe Glu Thr
 260 265 270
 Leu Gln Asp Lys Tyr Tyr Glu Glu Tyr Arg Leu Ala Asp Arg Ala Asp
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<210> 11

<211> 97

<212> DNA

<213> Mus musculus

<400> 11

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<211> 123

<212> DNA

<213> Mus musculus

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<211> 140

<212> DNA

<213> Mus musculus

<400> 13

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gtctctctgc tggactatgg 140

<210> 14

<211> 2855

<212> DNA

<213> Mus musculus

<400> 14

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caccaataga acaaaaaaaaaa aaaaaaaaaac tcgag

2855

<210> 15

<211> 1151

<212> DNA

<213> Mus musculus

<400> 15

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<210> 16

<211> 382

<212> PRT

<213> Mus musculus

<400> 16

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 35 40 45
 Ser Ala Asn Pro Ala Lys Thr Met Gln Gly Ser Glu Val Val Ser Val
 50 55 60
 Leu Lys Ser Leu Leu Ser Asn Leu Asp Glu Ile Lys Lys Glu Arg Glu
 65 70 75 80
 Ser Leu Glu Asn Asp Leu Lys Ser Val Asn Phe Asp Met Thr Ser Lys
 85 90 95
 Phe Leu Thr Ala Leu Ala Gln Asp Gly Val Ile Asn Glu Glu Ala Leu
 100 105 110
 Ser Val Thr Glu Leu Asp Arg Ile Tyr Gly Gly Leu Thr Ser Lys Val
 115 120 125
 Gln Glu Ser Leu Lys Lys Gln Glu Gly Leu Leu Lys Asn Ile Gln Val
 130 135 140
 Ser His Gln Glu Phe Ser Lys Met Lys Gln Ser Asn Asn Glu Ala Asn
 145 150 155 160
 Leu Arg Glu Glu Val Leu Lys Asn Leu Ala Thr Ala Tyr Asp Asn Phe
 165 170 175
 Val Glu Leu Val Ala Asn Leu Lys Glu Gly Thr Lys Phe Tyr Asn Glu
 180 185 190
 Leu Thr Glu Ile Leu Val Arg Phe Gln Asn Lys Cys Ser Asp Ile Val
 195 200 205
 Phe Ala Arg Lys Thr Glu Arg Asp Glu Leu Leu Lys Asp Leu Gln Gln
 210 215 220
 Ser Ile Ala Arg Glu Pro Ser Ala Pro Ser Ile Pro Pro Pro Ala Tyr
 225 230 235 240
 Gln Ser Ser Pro Ala Ala Gly His Ala Ala Ala Pro Pro Thr Pro Ala
 245 250 255
 Pro Arg Thr Met Pro Pro Ala Lys Pro Gln Pro Pro Ala Arg Pro Pro
 260 265 270
 Pro Pro Val Leu Pro Ala Asn Arg Val Pro Pro Ala Ser Ala Ala Ala
 275 280 285
 Ala Pro Ala Gly Val Gly Thr Ala Ser Ala Ala Pro Pro Gln Thr Pro
 290 295 300

Gly Ser Ala Pro Pro Pro Gln Ala Gln Gly Pro Pro Tyr Pro Thr Tyr
305 310 315 320

Pro Gly Tyr Pro Gly Tyr Cys Gln Met Pro Met Pro Met Gly Tyr Asn
325 330 335

Pro Tyr Ala Tyr Gly Gln Tyr Asn Met Pro Tyr Pro Pro Val Tyr His
340 345 350

Gln Ser Pro Gly Gln Ala Pro Tyr Pro Gly Pro Gln Gln Pro Thr Tyr
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<210> 17

<211> 1738

<212> DNA

<213> Mus musculus

<400> 17

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<210> 18

<211> 1521

<212> DNA

<213> Mus musculus

<220>

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<222> (102)..(103)

<223> "n" represents any nucleotide.

<400> 18

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<211> 720

<212> DNA

<213> Mus musculus

<400> 19

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<210> 20

<211> 801

<212> DNA

<213> Mus musculus

<400> 20

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attttacggt tatcatatag aaaattaaaa	660
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<210> 21

<211> 119

<212> DNA

<213> Mus musculus

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Phe Asn 1580 Cys Gln Phe Phe Ile 1585 Lys Asp Leu Tyr Gln 1590 Asp Val Leu	
tgt ctc act atg ttt gac aga gac cag ttt tct cca gat gac ttc	4824
Cys Leu 1595 Thr Met Phe Asp Arg 1600 Asp Gln Phe Ser Pro 1605 Asp Asp Phe	
ttg ggt cgt act gaa gtt cca gtg gca aaa atc cga aca gaa cag	4869
Leu Gly 1610 Arg Thr Glu Val Pro 1615 Val Ala Lys Ile Arg 1620 Thr Glu Gln	
gaa agc aaa ggc ccc acc acc cgc cga cta cta ctg cac gaa gtc	4914
Glu Ser 1625 Lys Gly Pro Thr Thr 1630 Arg Arg Leu Leu Leu 1635 His Glu Val	
ccc act gga gaa gtc tgg gtc cgc ttt gac ctg caa ctt ttt gaa	4959
Pro Thr 1640 Gly Glu Val Trp Val 1645 Arg Phe Asp Leu Gln 1650 Leu Phe Glu	
caa aaa act ctc ctt tga	4977
Gln Lys 1655 Thr Leu Leu	

<210> 27

<211> 1658

<212> PRT

<213> Mus musculus

<400> 27

Met Ala Gln Phe Pro Thr Ala Met Asn Gly Gly Pro Asn Met Trp Ala	
1 5 10 15	
Ile Thr Ser Glu Glu Arg Thr Lys His Asp Lys Gln Phe Asp Asn Leu	
20 25 30	
Lys Pro Ser Gly Gly Tyr Ile Thr Gly Asp Gln Ala Arg Thr Phe Phe	
35 40 45	
Leu Gln Ser Gly Leu Pro Ala Pro Val Leu Ala Glu Ile Trp Ala Leu	
50 55 60	
Ser Asp Leu Asn Lys Asp Gly Lys Met Asp Gln Gln Glu Phe Ser Ile	
65 70 75 80	
Ala Met Lys Leu Ile Lys Leu Lys Leu Gln Gly Gln Gln Leu Pro Val	
85 90 95	
Val Leu Pro Pro Ile Met Lys Gln Pro Pro Met Phe Ser Pro Leu Ile	
100 105 110	
Ser Ala Arg Phe Gly Met Gly Ser Met Pro Asn Leu Ser Ile His Gln	
115 120 125	

Pro Leu Pro Pro Val Ala Pro Ile Ala Thr Pro Leu Ser Ser Ala Thr
 130 135 140
 Ser Gly Thr Ser Ile Pro Pro Leu Met Met Pro Ala Pro Leu Val Pro
 145 150 155 160
 Ser Val Ser Thr Ser Ser Leu Pro Asn Gly Thr Ala Ser Leu Ile Gln
 165 170 175
 Pro Leu Ser Ile Pro Tyr Ser Ser Ser Thr Leu Pro His Ala Ser Ser
 180 185 190
 Tyr Ser Leu Met Met Gly Gly Phe Gly Gly Ala Ser Ile Gln Lys Ala
 195 200 205
 Gln Ser Leu Ile Asp Leu Gly Ser Ser Ser Ser Thr Ser Ser Thr Ala
 210 215 220
 Ser Leu Ser Gly Asn Ser Pro Lys Thr Gly Thr Ser Glu Trp Ala Val
 225 230 235 240
 Pro Gln Pro Ser Arg Leu Lys Tyr Arg Gln Lys Phe Asn Ser Leu Asp
 245 250 255
 Lys Gly Met Ser Gly Tyr Leu Ser Gly Phe Gln Ala Arg Asn Ala Leu
 260 265 270
 Leu Gln Ser Asn Leu Ser Gln Thr Gln Leu Ala Thr Ile Trp Thr Leu
 275 280 285
 Ala Asp Ile Asp Gly Asp Gly Gln Leu Lys Ala Glu Glu Phe Ile Leu
 290 295 300
 Ala Met His Leu Thr Asp Met Ala Lys Ala Gly Gln Pro Leu Pro Leu
 305 310 315 320
 Thr Leu Pro Pro Glu Leu Val Pro Pro Ser Phe Arg Gly Gly Lys Gln
 325 330 335
 Val Asp Ser Val Asn Gly Thr Leu Pro Ser Tyr Gln Lys Thr Gln Glu
 340 345 350
 Glu Glu Pro Gln Lys Lys Leu Pro Val Thr Phe Glu Asp Lys Arg Lys
 355 360 365
 Ala Asn Tyr Glu Arg Gly Asn Met Glu Leu Glu Lys Arg Arg Gln Val
 370 375 380
 Leu Met Glu Gln Gln Gln Arg Glu Ala Glu Arg Lys Ala Gln Lys Glu
 385 390 395 400
 Lys Glu Glu Trp Glu Arg Lys Gln Arg Glu Leu Gln Glu Gln Glu Trp
 405 410 415

Lys Lys Gln Leu Glu Leu Glu Lys Arg Leu Glu Lys Gln Arg Glu Leu
 420 425 430
 Glu Arg Gln Arg Glu Glu Glu Arg Arg Lys Glu Ile Glu Arg Arg Glu
 435 440 445
 Ala Ala Lys Gln Glu Leu Glu Arg Gln Arg Arg Leu Glu Trp Glu Arg
 450 455 460
 Leu Arg Arg Gln Glu Leu Leu Ser Gln Lys Thr Arg Glu Gln Glu Asp
 465 470 475 480
 Ile Val Arg Leu Ser Ser Arg Lys Lys Ser Leu His Leu Glu Leu Glu
 485 490 495
 Ala Val Asn Gly Lys His Gln Gln Ile Ser Gly Arg Leu Gln Asp Val
 500 505 510
 Gln Ile Arg Lys Gln Thr Gln Lys Thr Glu Leu Glu Val Leu Asp Lys
 515 520 525
 Gln Cys Asp Leu Glu Ile Met Glu Ile Lys Gln Leu Gln Gln Glu Leu
 530 535 540
 Lys Glu Tyr Gln Asn Lys Leu Ile Tyr Leu Val Pro Glu Lys Gln Leu
 545 550 555 560
 Leu Asn Glu Arg Ile Lys Asn Met Gln Leu Ser Asn Thr Pro Asp Ser
 565 570 575
 Gly Ile Ser Leu Leu His Lys Lys Ser Ser Glu Lys Glu Glu Leu Cys
 580 585 590
 Gln Arg Leu Lys Glu Gln Leu Asp Ala Leu Glu Lys Glu Thr Ala Ser
 595 600 605
 Lys Leu Ser Glu Met Asp Ser Phe Asn Asn Gln Leu Lys Glu Leu Arg
 610 615 620
 Glu Ser Tyr Asn Thr Gln Gln Leu Ala Leu Glu Gln Leu His Lys Ile
 625 630 635 640
 Lys Arg Asp Lys Leu Lys Glu Ile Glu Arg Lys Arg Leu Glu Gln Ile
 645 650 655
 Gln Lys Lys Lys Leu Glu Asp Glu Ala Ala Arg Lys Ala Lys Gln Gly
 660 665 670
 Lys Glu Asn Leu Trp Arg Glu Ser Ile Arg Lys Glu Glu Glu Lys
 675 680 685
 Gln Lys Arg Leu Gln Glu Glu Lys Ser Gln Asp Lys Thr Gln Glu Glu
 690 695 700

Glu Arg Lys Ala Glu Ala Lys Gln Ser Glu Thr Ala Ser Ala Leu Val
 705 710 715 720
 Asn Tyr Arg Ala Leu Tyr Pro Phe Glu Ala Arg Asn His Asp Glu Met
 725 730 735
 Ser Phe Ser Ser Gly Asp Ile Ile Gln Val Asp Glu Lys Thr Val Gly
 740 745 750
 Glu Pro Gly Trp Leu Tyr Gly Ser Phe Gln Gly Lys Phe Gly Trp Phe
 755 760 765
 Pro Cys Asn Tyr Val Glu Lys Val Leu Ser Ser Glu Lys Ala Leu Ser
 770 775 780
 Pro Lys Lys Ala Leu Leu Pro Pro Thr Val Ser Leu Ser Ala Thr Ser
 785 790 795 800
 Thr Ser Ser Gln Pro Pro Ala Ser Val Thr Asp Tyr His Asn Val Ser
 805 810 815
 Phe Ser Asn Leu Thr Val Asn Thr Thr Trp Gln Gln Lys Ser Ala Phe
 820 825 830
 Thr Arg Thr Val Ser Pro Gly Ser Val Ser Pro Ile His Gly Gln Gly
 835 840 845
 Gln Ala Val Glu Asn Leu Lys Ala Gln Ala Leu Cys Ser Trp Thr Ala
 850 855 860
 Lys Lys Glu Asn His Leu Asn Phe Ser Lys His Asp Val Ile Thr Val
 865 870 875 880
 Leu Glu Gln Gln Glu Asn Trp Trp Phe Gly Glu Val His Gly Gly Arg
 885 890 895
 Gly Trp Phe Pro Lys Ser Tyr Val Lys Leu Ile Pro Gly Asn Glu Val
 900 905 910
 Gln Arg Gly Glu Pro Glu Ala Leu Tyr Ala Ala Val Thr Lys Lys Pro
 915 920 925
 Thr Ser Thr Ala Tyr Pro Val Thr Ser Thr Ala Tyr Pro Val Gly Glu
 930 935 940
 Asp Tyr Ile Ala Leu Tyr Ser Tyr Ser Ser Val Glu Pro Gly Asp Leu
 945 950 955 960
 Thr Phe Thr Glu Gly Glu Glu Ile Leu Val Thr Gln Lys Asp Gly Glu
 965 970 975
 Trp Trp Thr Gly Ser Ile Gly Glu Arg Thr Gly Ile Phe Pro Ser Asn
 980 985 990

Tyr Val Arg Pro Lys Asp Gln Glu Asn Phe Gly Asn Ala Ser Lys Ser
 995 1000 1005
 Gly Ala Ser Asn Lys Lys Pro Glu Ile Ala Gln Val Thr Ser Ala
 1010 1015 1020
 Tyr Ala Ala Ser Gly Thr Glu Gln Leu Ser Leu Ala Pro Gly Gln
 1025 1030 1035
 Leu Ile Leu Ile Leu Lys Lys Asn Thr Ser Gly Trp Trp Gln Gly
 1040 1045 1050
 Glu Leu Gln Ala Arg Gly Lys Lys Arg Gln Lys Gly Trp Phe Pro
 1055 1060 1065
 Ala Ser His Val Lys Leu Leu Gly Pro Ser Ser Glu Arg Thr Met
 1070 1075 1080
 Pro Thr Phe His Ala Val Cys Gln Val Ile Ala Met Tyr Asp Tyr
 1085 1090 1095
 Met Ala Asn Asn Glu Asp Glu Leu Asn Phe Ser Lys Gly Gln Leu
 1100 1105 1110
 Ile Asn Val Met Asn Lys Asp Asp Pro Asp Trp Trp Gln Gly Glu
 1115 1120 1125
 Thr Asn Gly Leu Thr Gly Leu Phe Pro Ser Asn Tyr Val Lys Met
 1130 1135 1140
 Thr Thr Asp Ser Asp Pro Ser Gln Gln Trp Cys Ala Asp Leu Gln
 1145 1150 1155
 Ala Leu Asp Thr Met Gln Pro Thr Glu Arg Lys Arg Gln Gly Tyr
 1160 1165 1170
 Ile His Glu Leu Ile Gln Thr Glu Glu Arg Tyr Met Asp Asp Asp
 1175 1180 1185
 Leu Gln Leu Val Ile Glu Val Phe Gln Lys Arg Met Ala Glu Glu
 1190 1195 1200
 Gly Phe Leu Thr Glu Ala Asp Met Ala Leu Ile Phe Val Asn Trp
 1205 1210 1215
 Lys Glu Leu Ile Met Ser Asn Thr Lys Leu Leu Arg Ala Leu Arg
 1220 1225 1230
 Val Arg Lys Lys Thr Gly Gly Glu Lys Met Pro Val Gln Met Ile
 1235 1240 1245
 Gly Asp Ile Leu Ala Ala Glu Leu Ser His Met Gln Ala Tyr Ile
 1250 1255 1260

Arg Phe Cys Ser Cys Gln Leu Asn Gly Ala Thr Leu Leu Gln Gln
 1265 1270 1275
 Lys Thr Asp Glu Asp Thr Asp Phe Lys Glu Phe Leu Lys Lys Leu
 1280 1285 1290
 Ala Ser Asp Pro Arg Cys Lys Gly Met Pro Leu Ser Ser Phe Leu
 1295 1300 1305
 Leu Lys Pro Met Gln Arg Ile Thr Arg Tyr Pro Leu Leu Ile Arg
 1310 1315 1320
 Ser Ile Leu Glu Asn Thr Pro Gln Ser His Val Asp His Ser Ser
 1325 1330 1335
 Leu Lys Leu Ala Leu Glu Arg Ala Glu Glu Leu Cys Ser Gln Val
 1340 1345 1350
 Asn Glu Gly Val Arg Glu Lys Glu Asn Ser Asp Arg Leu Glu Trp
 1355 1360 1365
 Ile Gln Ala His Val Gln Cys Glu Gly Leu Ala Glu Gln Leu Ile
 1370 1375 1380
 Phe Asn Ser Leu Thr Asn Cys Leu Gly Pro Arg Lys Leu Leu His
 1385 1390 1395
 Ser Gly Lys Leu Tyr Lys Thr Lys Ser Asn Lys Glu Leu His Ala
 1400 1405 1410
 Phe Leu Phe Asn Asp Phe Leu Leu Leu Thr Tyr Leu Val Arg Gln
 1415 1420 1425
 Phe Ala Ala Ala Ser Gly His Glu Lys Leu Phe Asn Ser Lys Ser
 1430 1435 1440
 Ser Ala Gln Phe Arg Met Tyr Lys Thr Pro Ile Phe Leu Asn Glu
 1445 1450 1455
 Val Leu Val Lys Leu Pro Thr Asp Pro Ser Gly Asp Glu Pro Val
 1460 1465 1470
 Phe His Ile Ser His Ile Asp Arg Val Tyr Thr Leu Arg Thr Asp
 1475 1480 1485
 Asn Ile Asn Glu Arg Thr Ala Trp Val Gln Lys Ile Lys Gly Ala
 1490 1495 1500
 Ser Glu Gln Tyr Ile Asp Thr Glu Lys Lys Lys Arg Glu Lys Ala
 1505 1510 1515
 Tyr Gln Ala Arg Ser Gln Lys Thr Ser Gly Ile Gly Arg Leu Met
 1520 1525 1530

Val His Val Ile Glu Ala Thr Glu Leu Lys Ala Cys Lys Pro Asn
1535 1540 1545

Gly Lys Ser Asn Pro Tyr Cys Glu Val Ser Met Gly Ser Gln Ser
1550 1555 1560

Tyr Thr Thr Arg Thr Leu Gln Asp Thr Leu Asn Pro Lys Trp Asn
1565 1570 1575

Phe Asn Cys Gln Phe Phe Ile Lys Asp Leu Tyr Gln Asp Val Leu
1580 1585 1590

Cys Leu Thr Met Phe Asp Arg Asp Gln Phe Ser Pro Asp Asp Phe
1595 1600 1605

Leu Gly Arg Thr Glu Val Pro Val Ala Lys Ile Arg Thr Glu Gln
1610 1615 1620

Glu Ser Lys Gly Pro Thr Thr Arg Arg Leu Leu Leu His Glu Val
1625 1630 1635

Pro Thr Gly Glu Val Trp Val Arg Phe Asp Leu Gln Leu Phe Glu
1640 1645 1650

Gln Lys Thr Leu Leu
1655

<210> 28

<211> 30

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Primer

<400> 28

gaaggagaac tcagaccggc tggagtggat

30

<210> 29

<211> 21

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Primer

<400> 29

gacagaggag cgtacatgg a

21

<210> 30
<211> 21
<212> DNA
<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Primer

<400> 30
agctcccctg gttctggctt c

21

<210> 31
<211> 51
<212> DNA
<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Primer

<400> 31
gaattcagaa ccatggaaca aaagcttatt tctgaagaag acttggggcc c

51

<210> 32
<211> 37
<212> DNA
<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Primer

<400> 32
cctggattac aaggatgatg atgacaaatg actcgag

37

<210> 33
<211> 21
<212> PRT
<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Peptide

<400> 33

Met Ala Gln Phe Pro Thr Pro Phe Gly Gly Ser Leu Asp Val Trp Ala
1 5 10 15

Ile Thr Val Glu Glu
20